



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/512,056	10/21/2004	Norio Ito	0033-0959PUS1	8421
2292 7590 10/02/2007 BIRCH STEWART KOLASCH & BIRCH PO BOX 747 FALLS CHURCH, VA 22040-0747			EXAMINER BROOME, SAID A	
			ART UNIT	PAPER NUMBER
			2628	
			NOTIFICATION DATE	DELIVERY MODE
			10/02/2007	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

Office Action Summary	Application No. 10/512,056	Applicant(s) ITO ET AL.	
	Examiner Said Broome	Art Unit 2628	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 August 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 and 14-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 and 14-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 8/16/07 has been entered.

Response to Amendment

1. This office action is in response to an amendment filed 8/16/2007.
2. Claims 1, 2, 10 and 14 have been amended by the applicant.
3. Claims 12 and 13 have been cancelled.
4. Claims 3-9, 11 and 15-21 are original.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

In regards to the following limitation recited in claim 10: "making bolder a line of a font image", the definition of the line within the font image is unclear, as well as whether the line is comprised within the border or outer region of the image, or is a character within the image, therefore claims 10 and 11 are rejected under 35 U.S.C. 112, second paragraph. In regards to the

following limitation recited in claim 14: "thinner font line", the definition of the recited font line is unclear, therefore claims 14-21 are rejected under 35 U.S.C. 112, second paragraph.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-9 are rejected under 35 U.S.C. 102(b) as being anticipated by Osaka et al.(hereinafter "Osaka", US Patent 6,023,277).

Regarding claim 1, Osaka teaches a multimedia information generation apparatus for generating information including at least one two-dimensional image and one three-dimensional image (column 14 lines 16-24: "*FIG. 8 is...showing the configuration of a computer system...In this embodiment, a two-dimensional image and a three-dimensional (stereoscopic) image are switched between in...a display screen...*"), with the apparatus comprising a control information generation unit that generates control information for controlling display of said three-dimensional image (column 1 lines 9-12: "*...a display control apparatus and method for controlling a stereoscopic display device which allows a user to observe a stereoscopic image...*"). Osaka also teaches the control information includes the number of viewpoints for the three-dimensional image (column 16 lines 22-25) and image arrangement of the two-dimensional images corresponding to parallax images (column 8 lines 36-44). Osaka teaches a multimedia information generation unit generating said multimedia information including said at

least one two-dimensional image or character information and at least one three-dimensional image and said control information (column 14 lines 47-53: *"The display driver 6 comprises elements 7, 8, 9 and 10...An image painting unit 7 controls the painting of data actually painted on the stereoscopic display, namely a two-dimensional image handled heretofore and a three-dimensional image..."* and lines 57-63 (*"A screen controller 9 generates paint signals and distributes these signals to the image paint unit 7...A host computer 11 is capable of handling two-dimensional images and three-dimensional images."*), where the display driver 6 comprises a paint unit 7 that generates the two and three dimensional images and also a screen controller that controls the display of the three dimensional images (column 17 lines 41-47: *"...the screen controller 9 notifies the image painting unit 7 of the stereoscopic image data to be displayed, its display position and size..."*). Osaka also teaches that at least one two-dimensional image or character information and at least one three-dimensional image are data to be synthesized (column 13 lines 50-52: *"...a method of presenting a mixed display of a three-dimensional image and a two-dimensional image..."*).

Regarding claim 2, Osaka teaches a multimedia information generation apparatus (Figure 8), for generating multimedia information comprised of a plurality of modules (Figure 8: elements 1-12). Osaka also teaches a module including two-dimensional and three-dimensional images (column 14 lines 61-63: *"A host computer 11 is capable of handling two-dimensional images and three-dimensional images."*), where the computer processes the image information, and transmits the information to the object analyzer (Figure 8). Osaka teaches a module for controlling the display of the three-dimensional image (column 17 lines 41-47), and also teaches the control information includes the number of viewpoints for the three-dimensional image

(column 16 lines 22-25) and image arrangement of the two-dimensional images corresponding to parallax images (column 8 lines 36-44). Osaka teaches that at least one two-dimensional image or character information and at least one three-dimensional image are data to be synthesized (column 13 lines 50-52).

Regarding claim 3, Osaka teaches that control information is provided correspondingly to each three-dimensional image (column 17 lines 41-47).

Regarding claim 4, Osaka teaches that the control information is provided correspondingly to a plurality of three-dimensional images (column 17 lines 41-47: “...*the screen controller 9 notifies the image painting unit 7 of the stereoscopic image data to be displayed...causing a stereoscopic image display to be presented in the above-mentioned window.*”).

Regarding claim 5, Osaka teaches an identifier for identifying each of at least said two-dimensional image and said three-dimensional image is set in advance (column 16 lines 11-21: “*A three-dimensional image file 50 according to this embodiment includes a file header 51...image format...described in the file header. The application analyzes the header, reads in the image data and causes the computer to paint the image.*”), where the file header identifies that images prior to generation of the stereoscopic images (column 20 lines 61-63). Osaka also teaches that the control information includes the identifier of the three-dimensional image (column 38 lines 5-11), where the information used to control the display of the three-dimensional image is based on the identifier designating that the image is three-dimensional.

Regarding claim 6, Osaka teaches an identifier for identifying each of at least said two-dimensional image and said three-dimensional image is set in advance (column 16 lines 11-21),

Art Unit: 2628

where the file header identifies that images or prior to generation of the stereoscopic images (column 20 lines 61-63). Osaka also teaches that the control information includes the identifier of the three-dimensional image (column 38 lines 5-11), where the information used to control the display of the three-dimensional image is based on the identifier designating that the image is three-dimensional.

Regarding claim 7, Osaka teaches that the control information includes a plurality of identifiers (column 16 lines 11-21).

Regarding claim 8, Osaka teaches a predetermined value that indicates that the images are three-dimensional images (column 16 lines 19-21 and in column 17 lines 23-26), where the file header contains a pre-designated file extension that indicates whether the image is three-dimensional.

Regarding claim 9, Osaka teaches a predetermined value that indicates that the images included in the modules are three-dimensional images (column 16 lines 19-21 and in column 17 lines 23-26), where the images thereby included in the memory module, include a file header that contains a pre-designated file extension that indicates whether the image is three-dimensional.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 10 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Osaka in view of Akamatsu et al.(hereinafter "Akamatsu", US Patent 6,313,866) in further view of Ellson et al.(hereinafter "Ellson", US Patent 5,805,783).

Regarding claim 10, Osaka teaches a multimedia information reproduction apparatus reproducing multimedia information including at least one two-dimensional image or character information and at least one three-dimensional images (column 14 lines 16-24 and in column 4 lines 44-50). Osaka teaches a generation unit that generates a three-dimensional image from a two-dimensional image (column 21 lines 51-53: "*The stereoscopic-image-data processing unit 306 combines a pair of left and right image data...*" and lines 58-61: "*The display control unit 303 receives stereoscopic-image data formed by the stereoscopic-image-data processing unit 306...and displays the received data...*"). However, Osaka fails to teach a first synthesis unit that synthesizes a three-dimensional image generated by a generation unit and a three-dimensional image included in said multimedia information. Akamatsu teaches a first synthesis unit that synthesizes a three-dimensional image generated by a generation unit and a three-dimensional image included in multimedia information (column 5 lines 4-11: "...*a first image signal is input to an input terminal 11, while a second image signal is input to a second input terminal 12... The output terminal of the parallax control circuit 103 is connected to the three-dimensional image synthesizer 103.*"), where the synthesis unit synthesizes two input three-dimensional images, therefore one of ordinary skill in the art at the time of invention would have been capable of inputting the three-dimensional images generated by Osaka and synthesize the images. Osaka and Akamatsu fail to teach generating a three-dimensional image by making bolder the line of the font image corresponding to said character information when generating the

Art Unit: 2628

three-dimensional images from said character image. However, Ellson teaches making bolder the line of the font image corresponding to character information when generating the three-dimensional images from character image (column 1 lines 44-55: “...text is more often rendered in three dimensions...The next level of extension of the text into three dimensions adds a thickness to all font characters...by the definition of a thickness, the data can converted into three dimensions.”), where the thickness of the two-dimensional text is made thicker when it is converted to three-dimensional data, thereby maintaining the quality of the bolder text and improving visibility of the text after conversion. It would have been obvious to one of ordinary skill in the art at the time of invention to combine the teachings of Osaka, Akamatsu and Ellson because this combination would provide an improved stereoscopic environment that enables display of both three-dimensional and two-dimensional image simultaneously, wherein visual continuity is maintained as two-dimensional text is converted to three-dimensional image data.

Regarding claim 11, Osaka teaches a second synthesis unit that synthesizes a plurality of two-dimensional images or character information and generates three-dimensional image data from two-dimensional image data obtained through synthesis (column 41 lines 40-44 and column 26 lines 42-45).

Claims 14-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Osaka in view of Iizuka, in further view of Akamatsu, and in further view of Ellson.

Regarding claim 14, Osaka teaches a multimedia information reproduction apparatus reproducing multimedia information including at least one two-dimensional image or character information and at least one three-dimensional image (column 14 lines 16-24 and column 4 lines

Art Unit: 2628

44-50). Osaka illustrates a 2D/3D conversion that converts a page image (Figure 44: element 1033a) into a three-dimensional image (Figure 45: element 1033a), therefore the system disclosed by Osaka (Figure 28) contains one or more computer processing components that perform the equivalent functionality of a synthesis unit that synthesizes 2D data and converts the data into three-dimensional, or stereoscopic image data, for display. Osaka also illustrates a second font image, which is an image that displays two-dimensional character information in Figure 44 as element 1034b. Though Osaka teaches generating image data that is page data or data capable of comprising tables and lines (Figures 34 and 45), Osaka fails to teach decoding page data. Iizuka teaches decoding multimedia information, or image files, to obtain image data (column 21 lines 40-43: *"The image-file processing unit 304 reads various types of image files, analyzes the contents of the read file, decodes compressed data if necessary, and converts the data into image data having a predetermined standard format."*), where the image data representing the two-dimensional left and right images is decoded, therefore it would have been obvious to one of ordinary skill in the art at the time of invention to decode any image data including 2D image data presented in a 2D window, as shown by Osaka (Figures 34 and 45). However, Osaka and Iizuka fail to teach a first synthesis unit that synthesizes a three-dimensional image generated by a 2D/3D conversion unit and a three-dimensional image included in multimedia information and a first font image that displays character information three-dimensionally. Akamatsu teaches a first synthesis unit that synthesizes a three-dimensional image generated by a 2D/3D conversion unit and a three-dimensional image included in said multimedia information (column 5 lines 4-11), where the synthesis unit synthesizes two three-dimensional images, therefore one of ordinary skill in the art would be capable of inputting the

three-dimensional images as taught Osaka, and synthesize the two three dimensional images. Akamatsu also teaches a first font image, which is an image that displays character information three-dimensionally (column 3 lines 38-41 and in column 6 lines 33-38). However, Osaka, Iizuka and Akamatsu fail to teach a second font image or two-dimensional image containing character data has a thinner font line than that of a first font image. Ellson teaches a second font image or two-dimensional image containing character data has a thinner font line than that of a first font image or three-dimensional image (column 1 lines 44-55: “...text is more often rendered in three dimensions...The next level of extension of the text into three dimensions adds a thickness to all font characters...by the definition of a thickness, the data can converted into three dimensions.”), where the font of the two-dimensional image is thinner prior to conversion to a text with increased thickness. It would have been obvious to one of ordinary skill in the art at the time of invention to combine the teachings of Osaka, Iizuka, Akamatsu and Ellson because this combination would provide realistic two-dimensional window images represented in three dimensions stereoscopically thereby enabling accurate depth perception of any two-dimensional window or page data in a three-dimensional environment.

Regarding claim 15, Osaka fails to teach the limitations. Iizuka teaches decoding multimedia information, or image files, to obtain image data (column 21 lines 40-43: “The image-file processing unit 304 reads various types of image files, analyzes the contents of the read file, decodes compressed data if necessary, and converts the data into image data having a predetermined standard format.”), where the image data representing the two-dimensional left and right images is decoded, therefore it would have been obvious for one of ordinary skill in the art to decode various types of image data known in the art, including 2D window data as

illustrated by Osaka (Figure 45: element 1033a), in order to utilize the data for further stereoscopic image processing. The motivation to combine the teachings of Osaka, Iizuka, Akamatsu and Ellson is equivalent to the motivation of claim 14.

Regarding claim 16, Osaka illustrates a 2D/3D conversion that converts 2D image data (Figure 44: element 1033a) into a three-dimensional image (Figure 45: element 1033a), therefore the system disclosed by Osaka (Figure 28) contains one or more computer processing components that perform the equivalent functionality of a synthesis unit that synthesizes 2D font or character data and converts the data into three-dimensional, or stereoscopic image data, for display.

Regarding claims 17 and 20, Osaka teaches storing a first font image, or three-dimensional image and a second font image, or two-dimensionally displayed image (column 16 lines 11-15: “...*image file 50...includes...three-dimensional image data...and two-dimensional image data...*”). Osaka also teaches switching between the first and second font image (column 12 lines 6-8: “...*it is possible to switch between a two-dimensional display and a three-dimensional display...*”).

Regarding claim 18 and 21, Osaka teaches converting a second font image, or two-dimensional image, in to a first font image, or a three-dimensional image (column 21 lines 51-53 - 58-61).

Regarding claim 19, Osaka teaches that the first font image, or three-dimensional image which was generated through synthesis of the two-dimensional images, comprise a plurality of pieces of light/dark information and arranged so that apparent charter thickness is thin (column 27 lines 62-65: “...*the number of parallax images) reduces the aperture efficiency of the*

parallax barrier pattern, resulting in a darker observed image.“, Figures 24A, 24B, 51A-51C and 52A), where it is shown that the character thickness is presented thin so the pieces may be synthesized for stereoscopic viewing.

Response to Arguments

Applicant's arguments filed 8/16/07 have been fully considered but they are not persuasive.

The applicant argued on pg. 9 3rd ¶ line 3 of applicant's remarks that claim 10 has been amended in line 4 to recite: "a two-dimensional image", however, claim 10 shown in the amendment filed 6/19/07 does not reflect this change, therefore the applicant is requested to correct claim 10.

The applicant requests withdrawal of the 35 U.S.C. 112 second paragraph rejection of claims 10 and 14 due to the case law recited on pg. 10 1st-3rd ¶'s that states that no claim may be read apart from and independent from the disclosure on which it is based. However, claims 10, 11 and 14-21 remain rejected under 35 U.S.C. 112 second paragraph because although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

The applicant argues on pg. 11 section I. of the applicant's remarks, that the reference Osaka used in the 35 U.S.C. 102(b) rejection of claim 1, does not disclose or suggest that the control information includes the number of viewpoints for said three-dimensional image and at least one of i) a direction of thinning during generation of said three-dimensional image from said two-dimensional image, ii) image arrangement of said two-dimensional images

corresponding to parallax images, and iii) reversal information on each of said parallax images. However, Osaka teaches that the control information includes the number of viewpoints for the three-dimensional image (column 16 lines 22-25), as well as information regarding an image arrangement of the two-dimensional images corresponding to parallax images (column 8 lines 36-44).

The applicant states on pg. 12 in section **II.** that the reference Ellson et al. (US Patent 5,805,783) was not provided in any previously filed PTO-892 form, therefore an updated PTO-892 has been provided with this action.

The applicant argues on pg. 13 section **II.** 3rd ¶ lines 4-7 of the applicant's remarks, that the reference Ellson used in the 35 U.S.C. 103(a) rejection of claims 10, 11 and 14 does not disclose or suggest three-dimensional image is generated by making bolder a line of a font image corresponding to said character information when generating the three-dimensional image from said character image. However, Ellson teaches increasing the thickness of characters in an image when generating a three-dimensional image (column 1 lines 44-55), therefore the lines comprised in the displayed characters of the font image are bolded due to the increased thickness of the characters (e.g., I → **I**).

The applicant also argues on pg. 13 section **II.** 3rd ¶ lines 4-7 of the applicant's remarks, that the reference Ellson used in the 35 U.S.C. 103(a) rejection of claims 10, 11 and 14 does not disclose or suggest that when a first font image and a second font image corresponding to the character information are provided, the second font image has a thinner font line than that of the first font image, the first font image is used when the character information is three-dimensionally displayed and the second font image is used when the character information is

Art Unit: 2628

two-dimensionally displayed. However, Ellson teaches when a first and second font image corresponding to the character information are provided, the second font image has a thinner font line than that of the first font image (column 1 lines 44-55), where a second font text containing plain text known in the art is described to have a thinner font line than a first font text with increased thickness. Ellson also teaches that a first font image, or an image containing characters with increased thickness for three-dimensional display are provided (column 1 lines 44-55: “...text is more often rendered in three dimensions...The...extension of the text into three dimensions adds a thickness to all font characters...”), and also teaches a second font image, or an image containing text displayed without increased thickness as two-dimensional (column 1 line 43), as commonly known in the art, therefore the font image is thinner when two-dimensionally displayed, and thicker when displayed three-dimensionally.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Said Broome whose telephone number is (571)272-2931. The examiner can normally be reached on M-F 8:30am-5pm.

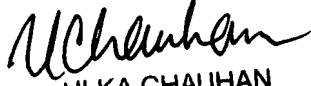
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ulka Chauhan can be reached on (571)272-7782. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

Art Unit: 2628

applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Said Broome/
Art Unit 2628
9/24/07


ULKA CHAUHAN
SUPERVISORY PATENT EXAMINER